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## Project-based Learning: Promoting Meaningful Language Learning for Workplace Skills

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### Abstract

Although employers acknowledge that most graduates are knowledgeable, they are also complaining that varities are not producing quality output for them as most graduates lack soft skills. This preliminary study was conducted to find out to what extent project based learning (PjBL) facilitates the transference and inculcation of workplace related skills. These skills are integrated in a project work assigned in Workplace Communication course. This study will help the researchers to gauge students' learning experiences while undergoing the different processes involved in the project work. A set of questionnaire was designed and administered to identify students' skills utilized in project-based learning, namely language skills, interpersonal skills, critical thinking, collaborative skills and leadership skills. Hence, this pilot study on project-based learning will assist the course designers in improving the project work instruction. It is hoped that this study will equip Universiti Kebangsaan Malaysia students with the necessary 21<sup>st</sup> century workplace skills.

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### 1. Introduction

Currently, employers main concerns are finding good workers who not only have basic academic skills like reading, writing, oral communication and listening, but also have higher order thinking skills like learning, reasoning, creative thinking, decision making and problem solving. Besides, they are also looking for employees that have personal qualities that among all include responsibility, self-confidence, self-control, social skill, honesty, integrity, adaptable and flexible, team-spiritedness, punctual and efficient, self-directedness, good work attitude, well-groomed, cooperative, self-motivated and self-management. These employability skills are also referred to as job readiness skills (Surina Nayan & Latisha Asmaak Shafie, 2010). Therefore, there is a need to study to what extent project-based learning contributes to learners' acquisition in language and employability skills.

Project based learning (PjBL) is a comprehensive instructional approach which engages students in an organized and cooperative manner to investigate and resolve certain problem. Moursund (2007) defines PjBL as an individual

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or group activity that goes on over a period of time, resulting in a product, presentation or performance. Moursund (2007) further elaborates that PjBL typically has a time line and milestones, and other aspects of formative evaluation as the project proceeds. Whereas Buck Institute of Education (2007) states PjBL as a systematic teaching method that engages students in learning knowledge and skills through an extended inquiry process structured around complex, authentic questions and carefully designed products and tasks.

The above definitions are reflected in constructivist learning theory whereby knowledge is constructed by learners as they attempt to make sense of their experiences based on their current and previous knowledge. Grant (2002) synthesizes from previous studies done by Perkins (1991), Piaget (1969), and Vygotsky (1978) that in constructivism, interactions with the environment through conducting investigations, conversation or activities, individuals construct new knowledge by building on their current knowledge. Consequently, in PjBL, learners learn meaningfully through the process of exploring, scaffolding, interpreting, negotiating, and creating products namely presentation and written report required in their project work.

PjBL also reflects Vygotskian's perspective of learning. Vygotsky in Wertcsch (1985) theorizes that learning takes place through social interaction that encourages individuals to deal with the kind cognitive challenges that are just slightly above their current levels of ability. He further explains that concepts develop and understanding happens when learners enter into discussion and meaningful interaction with more capable peers or teachers. This permeates learners to model problem solving, assist finding solutions, monitor progress and evaluate success while engaging themselves in PjBL. It is undeniable that PjBL is beneficial to students' as they acquire and practice not only workplace skills but also language skills while carrying out the project work.

The following studies have shown that PjBL benefits students in language learning for the following reasons:

- Enable learners to transfer concepts taught in settings that are similar to real-world contexts into future settings and situations as learners think that language learning is related to their everyday lives (Sidman Taveau & Milner-Bolotin, 2001).
- Strengthen language learners' diverse needs and skills in collaborative nature of project work (Lawrence, 1997).
- Equip learners with project-work related skills namely: to plan, organize, negotiate, make consensus, to take responsibility, research and present information (Stein, 1995). These skills are considered necessary by employers in workplace.
- Motivate learners to learn language and to improve their language competence (Ellis, 1994).
- Enable learners to acquire meaningful input and expression from their peers and materials that is beyond their existing linguistic competence, that is,  $i+1$  (Ellis, 1994).

Incorporating PjBL in Workplace Communication course unquestionably improves language learning and at the same time meets the requirement of the employers. This is well supported by Moss, Van Duzer and Carol (1998) who affirm that project-based work lends itself well to evaluation of both language skills and employability skills. This study aims to find out the relevance of PjBL in relation to equip learners with the employability skills required by employers. Literature and previous studies have shown that PjBL has contributed to produce students who are dynamic and competent in carrying out projects in accordance to the needs of the workforce in the 21<sup>st</sup> century.

## 2. Research objectives

- i. To investigate students' perceptions on the process of project based learning in project work
- ii. To find out the collaborative skills acquired by the students in project based learning
- iii. To find out to what extent project based learning integrated in project work has equipped students with the employability skills needed in the real workplace environment

## 3. Literature Review

In real workplace settings, skills such as decision-making, problem-solving, managing conflicts, team working and being innovative are important elements of job competence. Kloppenborg and Baucus (2004) reiterate that many of skills learned through PjBL are highly sought by today's employers including the ability to work well with others and handle interpersonal conflicts, make thoughtful decisions, practice and solve complex problems. Kloppenborg

and Baucus (2004) also report on the learning outcome of students as manifested in their successful experiences gained in planning, managing, and accomplishing projects. Successful experiences include the ability to resolve conflicts through creative problem solving approaches and the accomplishment of a project that make them more aware of real life problems and issue. Therefore, PjBL plays a significant role in exposing students to a meaningful learning process while they are engaged in completing their project.

Bell (2010) states that project based learning (PjBL) promotes social learning as students practice and become proficient with the 21<sup>st</sup> century skills of communication, negotiation, and collaboration. Bell further elaborates that the uses of technology provide instruction to the student by demonstrating innovative usage of various applications through appropriate ways of using technology. When students share their work or challenges, a brainstorming session often helps them build on each other's ideas for future possibilities which promotes creativity and out-of-the-box thinking. Gultekin in Bell (2010) affirms that through PjBL students become better researchers, problem solvers, and higher-order thinkers. Research supports that students using PjBL perform better on both standardized assessments and project tests than students in traditional direct instruction programs, and that they learn not only real-world application of skills, but also analytical thinking as stated in Boaler's study (1999)

In undergoing the process of PjBL, learners are involved in preparing questions to collect relevant information for their project. Rosen (1998) emphasizes that learners develop questions as a group, divide the work among individuals or pairs to find answers to selected questions using a variety of sources such as the internet or guest speakers. Rosen (1998) also states that the criteria for project work are, learners work in a group to select topics of interest and decide the direction of their learning. They rely on insights from their peers while providing feedback to others; they may use the teacher as a resource, but by and large, they create their own knowledge.

In PjBL, teacher acts not only as a resource but also as a guide and a facilitator. Referring to teacher's role in PjBL, Wrigley (2010) points out that teachers should be aware of their learners' interests. Teachers also assist learners move in the direction that they want to go, pointing out potential pitfalls or making suggestions without getting defensive when students prefer their own ideas. In a study conducted by Donnelly and Fitzmaurice (2005), the realization of PjBL environment depends to a large extent on the skill of the teacher to lead and facilitate group discussion. In addition, Donnelly and Fitzmaurice (2005) propagate that teacher needs to move away from their past practice as the usual teacher to a more facilitatory role. In other words, teacher focuses on questioning students' logic and beliefs, providing hints to correct invalid student reasoning, providing resources and keeping students on tasks. Thus, it is inevitable that teacher plays a crucial role in determining the success of project based learning towards completing a project work.

#### **4. Research Design**

Both qualitative and quantitative research will be used in this study to find out if project-based learning integrated in Workplace Communication course offered by Centre For General Studies UKM equips students with the necessary skills needed in the real workplace environment. Students' achievements in carrying out the project work will be assessed based on the three components namely conferencing, short reports, and oral presentation.

##### *4.1. Instrument*

A survey questionnaire was designed and administered to 29 second year students who took Workplace Communication course from Faculty of Science and Technology and Faculty of Information Technology. It consists of five sections to elicit students' responses to project based learning namely as:

- A. Project based learning in general (6 items)
- B. Collaborative learning (10 items)
- C. Listening and speaking (8 items)
- D. Reading (8 items)
- E. Writing (10 items)

The questionnaire employs a 1 – 5 point Likert scale with 1 being Strongly Disagree and 5 being Strongly Agree. Section A consists of statements which examines students' perception of project based learning in general. Section B surveyed students' perception on collaborative learning in PjBL. Section C, D, and E gather students' reflection

on their improvement in the language skills when involved in PjBL. For the purpose of this study, only findings from Section A and B are discussed as these two sections are the fundamental basis of project-based learning. Other sections will be discussed in our further study on PjBL.

Students were asked to respond to the questionnaire upon completion of their project work. Findings from the questionnaire were analysed using SPSS version 18. Students' responses were analysed using descriptive statistics in the form of frequency and percentage. The results were analysed and discussed quantitatively and qualitatively.

#### 4.2. The subjects

29 second year students from and Faculty of Information Science and Technology and Faculty of Science and Technology were randomly chosen to respond to the questionnaire. Workplace Communication was the second and the last language course they had to take during their entire academic year at UKM. In the earlier semester, they had taken Academic Communication as they obtained MUET band 3 and 4. The subjects comprise a heterogeneous group of diverse social and cultural backgrounds. They consist of Malays, Chinese, and other ethnic groups from Sabah and Sarawak. This study is unique in that the respondents came from diverse backgrounds and worked collaboratively as a team. To date, this has remained unexplored. Most previous studies on PjBL were conducted amongst homogenous ethnic groups (Bell, 2010; Grant, 2002; Doppelt, 2003 and Thomas, 2000) .

#### 4.3. Project description

This project work required students to work in groups of 2-3 and identify a problem area at a workplace. Each group then decided on the methods to employ in gathering information for the project. The methods used included observations, questionnaires, and interviews. Groups had to make effective presentations of the report at the end of the semester and produce a problem solution report as the final product. Each group will assume themselves as representatives of a company that has been commissioned by UKM to solve an internal problem. The group members collect information/data and also update their employer (class instructor) while working on the project.

Learning outcomes of the project work are as follows:

- Design and carry out a social science study using instruments such as questionnaire, interview and /or observation.
- Demonstrate leadership qualities when working in groups.
- Apply analytical and problem-solving skills.
- Demonstrate effective oral presentation skills of the report.
- Write effective emails and project report.

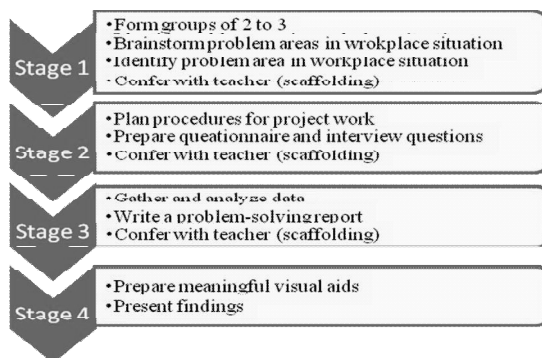


Figure 1 Stages of Project Work

Figure 1 above illustrates stages of project work which were carried out in duration of approximately 10 weeks, starting from week 3 to week 12. In carrying out the project work, teachers provide scaffolding in the form of comments, feedback, guidance, and suggestions based on students' progress in their project work. In addition,

teachers also monitor students' progress of project work through e-mail interactions with their group members and with the teacher who acts as their employer.

## 5. Findings and Discussion

This section discusses the result of the study by examining the students' questionnaire responses (N=29). The discussion will highlight the most significant findings especially in Section A and B, namely project based learning in general and collaborative learning respectively. To facilitate the discussion in this section, the alphabet and number in the parenthesis such as (A1) will be used to refer to the questionnaire items in the relevant sections.

### 5.1. Project Based Learning in General

The 6 items in Section A required the students to indicate their perceptions towards incorporating PjBL in completing their project work as a component of their language learning activities in general. The questions are divided into different categories such as "attitude" and the "effects" of using PjBL.

Table 1. Students' Responses towards Project Based Learning in General

SECTION A	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1. Doing this project work in a group was better than working alone.	3.4	3.4	17.2	41.4	34.5
2. I benefited from the input of other group members.	-	3.4	27.6	44.8	27.1
3. Project did not take too much of my time.	17.2	17.2	37.9	24.1	3.4
4. Project work created opportunities for me to make active investigations that enabled me to learn concepts, apply information, and represent my knowledge in a variety of ways.	-	3.4	27.6	55.2	13.8
5. I find project work fun, motivating, and challenging because I could play an active role in choosing the project and in the entire planning process.	3.4	6.9	31.0	37.9	20.7
6. Project work helps me improve my English	3.4	6.9	31.0	37.9	20.7

Items 1, 2, and 3 in Table 1 above are to garner respondents' perceptions towards using project based learning in general. Majority of the respondents stated they prefer to work collaboratively as project based learning requires respondents to work in groups and promotes team building whereby 6.8% chose to answer "Strongly disagree" and "disagree" to the statement "Doing this project work in a group was better than working alone"(A1). Bell (2010) stresses that when students worked collaboratively, there is an expectation that each student will contribute to the project equally. The group dynamic creates an interdependent team in which students must do their part. Hence, peer pressure contributes to the accomplishment of ongoing group tasks throughout the learning process and the culmination of a successful final product.

Students learn accountability through continuous goal setting in PjBL, as well as meeting expectations of their peers. In response to whether PjBL provides opportunities to acquire new information or knowledge from their peers (A2), 81.9% indicated that they benefit from the input of other group members in completing their project work. Students respect and acknowledge the information contributed by their peers. This further motivates them to share what they have gathered with their peers. As students undergo this project, they must brainstorm ideas and act as good listeners to their group members. They negotiated, listened, and welcomed other group members' ideas. Students also self-evaluate their own contributions, efforts, motivations, interests, and productivity levels. Students become critical friends by giving constructive feedback to each other, which helps them become aware of their own strengths and weaknesses. When asked about duration taken in completing the project work (A3), 27.5% agreed that doing the project work is not time consuming while 34.4% answered otherwise.

probable reasons. Firstly, the students themselves were accountable and took charge of their own learning process and goal setting. They must have utilized their work time effectively, stayed focused and on-task to succeed and goal setting helped them to learn to manage their own time. Furthermore, Doppelt (2003) maintains that students' motivation to learn their discipline and their willingness to work on their projects for longer hours indicate that they behave like high achievers. Secondly, students do not feel the strain of the longer hours as the language teacher has executed her role well, efficiently and successfully as a facilitator who set datelines and monitor students' progress. The teacher supervised each step of the process and approved each choice before the students embarked in a direction. From time to time conferencing were held with students to ensure that students were on track and datelines could be met.

Teacher's supervision and monitoring are in tandem with the strategies for successful projects suggested by Buck Institute of Education (2007) and among them are to have specific goals, tasks and outcomes aligned with instructional objectives and to have specific beginning and end dates and intermediate datelines. In spite of the negative response made by respondents in terms of time spent in completing the project work, majority of them indicated that they do gain benefits when they were actively involved in the project work. In other words, the benefits of PjBL supersede the negative effects as these are evidence in students' responses to items A4, A5 and A6.

Items A4, A5 and A6 focus on the effects of incorporating PjBL in the students learning of English specifically in Workplace Communication course. Generally, the findings indicated positive effects of using PjBL as students benefitted considerably. This is because the assigned project work is student-centred, teacher-facilitated, process oriented and engages students in real-world tasks. Bell (2010) also advocates that students have the tendency to develop greater understanding of a topic, deeper learning, higher-level reading, and increased motivation to learn in PjBL. This claim is deemed agreeable by majority of the students when about 69% of the students realized that after undergoing the process of project work, it created opportunities for them to make active investigations that enabled them to learn concepts, apply information, and represent their knowledge in a variety of ways (A4). The transference and inculcation of these skills are possible as PjBL advocates pedagogical instruction that teaches curriculum concepts through a project.

When respondents were asked to give their feedback on how they felt after undergoing the challenging and demanding process involved in project work, interestingly, 58.6% admitted that project work was fun, motivating, and challenging because they could play an active role in choosing the project and in the entire planning process (A5), whereas, 10.3 % of the respondents did not have similar reaction. The positive outlook towards PjBL is due to the nature of the orientation of the project work as it allows students to explore and engage in meaningful real life situation. They are actually solving real-world problems by designing their own inquiries, planning their learning, organizing their research, and implementing a multitude of learning strategies. Therefore, learning does not only take place within a four wall classroom which at times could be a threatening and intimidating environment for the student, but also in a more conducive and engaging environment as students have to solve real world problem. This then further promotes the use of the English language when they were in direct contact with their respondents, and when they surf the Internet in gathering information and knowledge to solve the problem they have chosen for their authentic project work.

In PjBL, students learned how to navigate the Internet wisely, as well as to discriminate between reliable and unreliable sources. Undeniably, 79.3% of the students agreed to the statement "project work helps me improve my English language proficiency" (A6). As students had to inquire, read, write, present, interact and socialize in English, these indirectly create the platform for students to interact and engage themselves with the English language meaningfully and purposively. Simultaneously, students learn the fundamental skills of productive communication, respect for others, and teamwork while generating ideas together. Thus, PjBL promotes social learning as students practice and become proficient with the 21<sup>st</sup> century skills of communication, negotiation, and collaboration (Bell, 2010).

## 5.2. Collaborative learning

This section discusses Section B of the questionnaire, which focuses on collaborative learning. These include team work (items 4, 6, 10) managing conflicts (items 2,3,5), decision making ( item 1) and communication skills (items 7,8,9) as shown in Table 2 below.

SECTION B		Strongly Disagree	Agree	Unsure	Agree	Strongly Agree
1	I learned to make decisions based on discussion with my group members.	-	-	27.6	51.7	20.7
2	I became more perceptive and sensitive to the needs of others during group work.	-	-	27.6	51.7	20.7
3	I learned to work successfully with students from different social and cultural groups	-	-	34.5	48.3	17.2
4	I learned to delegate responsibilities to my group members.	-	6.9	27.6	37.9	27.6
5	I learned to manage conflicts within my group.	-	3.4	34.5	48.3	13.8
6	I build work skills because I had to work in teams to solve problem and complete a task.	-	3.4	27.6	44.8	24.1
7	I learned to use formal and informal language in the appropriate context of discourse.	-	3.4	27.6	44.8	24.1
8	I learned how to conduct an interview	-	-	48.3	37.9	10.3
9	I improved my social skills by meeting and talking to employers and workers of an organisation.	-	6.9	27.6	37.9	27.6
10	I learned that good team-work contributes to a successful outcome of the project.	-	3.4	17.2	44.8	34.5

Advantages of project-based learning include the encouragement of student initiative, self-directiveness, inventiveness, and independence. As problem-based learning is a student-centred process, it is the responsibility of the individual student to participate fully, not only for his or her own learning, but also to aid the learning of others in the group. Almost three quarters or 72.4% of the respondents learned to delegate responsibilities to their group members while two respondents 6.9% did not (B4). Results indicated that almost two-thirds or 68.9% of the respondents felt that they managed to build work related skills because they had to work in teams to solve problem and complete a task (B6). Majority or 79.3% of the respondents recognizes that good team-work contributes to a successful outcome of the project (B10). Thus, indirectly, in PjBL, students acquire the 21<sup>st</sup> century skills which will assist them in becoming productive members of a global society (Bell, 2010). These skills involve active listening which enhances collaborative ability as well as creativity in generating and negotiating ideas together as a team.

In the process of generating and negotiating ideas, students may face conflicts in making decisions. Negotiating how to collectively solve a problem is also part of project-based learning (Bell, 2010). Astoundingly, 86.2% of the respondents learned to manage conflicts within their group with an exception of only one respondent or 3.4% who felt otherwise (B5). This shows that collaborative learning through project work prepares a learning space so that students can learn with and from each other (Palmer, 1998). It was found that more than two thirds of the respondents or 79.3% agreed that they became more perceptive and sensitive to the needs of others during group work (B2). It is important for students to be perceptive and sensitive as their group members are from different ethnic backgrounds. Results showed that 65% of the respondents learned to work successfully with other students from different social and cultural groups (B3). Apparently, social and cultural differences do not pose barriers for successful decision making.

According to Tretten and Zachariou (1997), by finding or creating solutions in relevant projects, students working both individually and cooperatively feel empowered when they use effective work habits and apply critical thinking to solve problems. A majority of the respondents or 79.3% learned to make decisions based on discussion with their group members during their project work (B1). In decision making, students are involved in social interaction which includes giving and exchanging ideas.

Another benefit of collaborative learning through PjBL according to Blumenfeld (1991) is that the entire process (of PjBL) is meant to be authentic: mirroring real world production activities and utilizing students' own ideas and approaches to accomplish the tasks at hand. Out of the total number of respondents, nineteen respondents or 65.5% improved their social skills by meeting and talking to employers and workers of an organization, whereas two respondents or 6.9% did not seem to think they did (B9). Sidman-Taveau & Milner-Bolotin (2001) affirm that

learners are able to transfer concepts taught in settings that are similar to real-world contexts into future settings and situations as learners think that language learning is related to their everyday lives. Results showed that 68.9% learned to use formal and informal language in the appropriate context of discourse (B7) during their social interactions with group members and interviewees.

In carrying out this project work, respondents were asked to conduct interview with employers to gain information regarding problems at workplace. In item B8, respondents were asked whether they learned how to conduct an interview. 50% of the respondents agreed that project-based learning enabled them to learn ways of conducting an interview and surprisingly, the other half of the respondents were unsure (B8). This may be due to students' lack of confidence, low proficiency, high anxiety, intimidation and shyness in speaking. In addition, they may lack the appropriate social skills in conducting effective interviews. This result corresponds with Bell (2000) who states that a project-based course demands from students a heightened level of self-confidence, motivation, and ability to organize their own work plans.

## 6. Conclusion

The findings of this study have shown that PjBL facilitates the transference and inculcation of workplace related skills among the subjects. PjBL has successfully exposed students to various skills such as team-working, managing conflicts, decision making, and communication skills. Engaging themselves in these skills has assisted learners to be more independent, confident, and productive in generating and discussing ideas. Tretten et al. (1997) emphasizes that in this productive work (PjBL), students not only learn, but also strengthen their work related skills, their critical thinking skills and their productivity. The above skills learned through PjBL are those sought by today's employers and apparently have met the learning outcomes of project work as stipulated in the Workplace Communication course. Upon meeting future needs, learners must acquire collaborative, negotiating, planning, and organizational skills. By implementing PjBL, we are preparing our students to meet the 21<sup>st</sup> century with preparedness and a repertoire of skills they can use successfully (Bell, 2010).

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